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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,299	04/12/2005	Hiroto Nishida	1188-0122PUS1	8355
2292 7590 11/14/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER LAWRENCE JR, FRANK M	
			ART UNIT 1797	PAPER NUMBER
			NOTIFICATION DATE 11/14/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/506,299

Applicant(s)

NISHIDA ET AL.

Examiner

Frank M. Lawrence

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date (3).

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: none of the reference signs are in the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 9 recites the limitation "the purge gas" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 9 should be amended to depend from claim 8.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 7-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the European Patent Application (EP 0586244 A1).

7. EP '244 teaches a method of reusing an exhaust gas in a polyolefin production plant, comprising producing an exhaust gas containing residual monomers, nitrogen, and hydrocarbon solvent from a polymerization reactor (A), directing the exhaust gas to a flash chamber (B) and a stripping zone (C), directing exhaust gas containing remaining monomers, nitrogen and solvent to a pressure swing adsorption unit (D), selectively adsorbing hydrocarbons in the adsorber to produce purified nitrogen, regenerating the adsorber under reduced pressure with purified nitrogen product purge gas, reusing nitrogen product for pressurizing the regenerated adsorber and as stripping gas in the stripping zone, and recirculating separated hydrocarbons to the polymerization reactor. The adsorber can contain two columns in a pressure swing arrangement, each containing a single layer or multiple layers of adsorbent such as silica gel or zeolite (see col. 1, line 6 to col. 3, line 35, col. 4, line 48 to col. 7, line 56, figure 1).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP '244 in view of Zwilling et al. (2003/0070546).
10. EP '244 discloses all of the limitations of the claims except that the adsorbent layers have decreasing pore diameters in the feed flow direction and that water is also removed. Zwilling et al. '546 disclose a process for recovering nitrogen and monomers from a polymerization reactor exhaust, comprising contacting with an adsorbent unit that preferentially removes light hydrocarbons from nitrogen, and reusing purified nitrogen as purge gas in the polymerization reactor, wherein the adsorbent unit contains multiple beds and a pretreatment layer to adsorb water (see figure 1, paragraphs 45, 51, 53-71). It would have been obvious to one having ordinary skill in the art at the time of the invention to provide a water adsorbent layer in the adsorber of EP '244 in order to provide a means for protecting downstream water-sensitive adsorbents from water contamination and for increasing the purity of recovered nitrogen. It is submitted that one having ordinary skill in the art would have known to arrange the adsorbent layers in a known manner to methodically remove contaminants based on their affinity to different types of adsorbents due to the ability of certain molecule sizes to enter adsorbent pores.
11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP '244 in view of Sircar et al. (6,322,612).
12. EP '244 discloses all of the limitations of the claims except that the adsorbent is pressurized with inert gas from a gas holder drum. Sircar et al. '612 disclose a pressure swing adsorption process wherein a regenerated adsorbent column is resuritized using product gas from another adsorption column or from a storage vessel at feed pressure (see figures, col. 8, line

66 to col. 9, line 11). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of EP '244 by using pressurization gas from a storage vessel in order to provide supplemental pressure when adsorption product effluent from another adsorber is insufficient or not economical.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references listed on the attached PTO-892 form disclose systems for treating polymerization reaction exhaust.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Frank M. Lawrence
Primary Examiner
Art Unit 1797

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Frank Lawrence
10-18-07